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10/533,630	05/02/2005	Masayuki Tsumura	SONYJP 33-1028	6327

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EXAMINER	
GUARINO, RAHEL	

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/533,630	TSUMURA, MASAYUKI	
	Examiner	Art Unit	
	Rahel Guarino	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5 and 6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5* is/are rejected.

7)☐ Claim(s) *3 and 6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to communication filed on 3/9/2009. Claims 4 and 7 have been cancelled. Claims 1-3, 5,6 are pending on this application.

Response to Arguments

2. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1,5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi US, 6,940,923 in view of Ippei et al. (JP2000-138722) and in further view of Hisateru (JP2003-348030)

Re claim 1, Ohishi discloses a receiving apparatus (fig.14, (broadcast receiver)), comprising: demodulation means (fig. 1 (20, demodulation device), col. 2 lines 37-38) for demodulating a reception signal to a signal on a real axis and a signal on an imaginary axis (col.4 lines 35-50; the digitally converted signal by the digital signal generator (see fig.1) is mapped into I and Q axes (real and imaginary axes, see fig, 2-4), fig.2 shows High C/N ratio and no phase noise, fig.3 shows High C/N ratio and phase noise included and fig. 4 shows Low C/N ratio and phase noise included); C/n ratio calculation means for calculating a c/n ratio with the amplitudes in an amplitude direction of signal points of the demodulation signal demodulated by said demodulation means (col. 2 lines 1-4); and a C/N ratio with the amplitudes in a phase direction of the signal points of the demodulation signal demodulated by said demodulation means (col. 5 lines 17-21, fig.3 shows with the high C/N ratio and phase noise included, the amplitude varies with the phase direction); and indication means for indicating the C/N ratios calculated by said C/N ratio calculation means (col. 10 lines 41-65); does not disclose phase noise detection means for detecting phase noise on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction.

However, Ippei teaches phase noise detection (phase error detection (5)) means detection means (para#67 lines 5-67) for detecting phase noise on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction (para#68).

The modified invention of Ippei and Ohishi does not teach a display unit to display the phase noise detected by the phase noise detection means based on the C/N ratio calculated with the amplitudes in the amplitude direction as a numeric value.

However, Hisateru teaches teach a display unit (5) to display the phase noise detected by the phase noise detection means based on the C/N ratio calculated with the amplitudes in the amplitude direction (fig.9) with the amplitudes in the amplitude direction as a numeric value (para#61).

Therefore, taking the combined teaching of Ohishi and Ippei as a whole would have been rendered obvious to one skilled in the art to modify Ohishi to detect phase noise on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction for the benefit of automatically adjusting the loop gain according to the phase noise quantity (para#69, Ippei).

Therefore, taking the combined teaching of Hisateru, Ohishi and Ippei as a whole would have been rendered obvious to one skilled in the art to modify Ohishi and Ippei to display the phase noise detected by the phase noise detection means based on the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N for the benefit of determining the quality of the received signal quantitatively (para#007, Hisateru).

Re claim 5, Ohishi discloses a C/N ratio indication method for a receiving apparatus(fig. 1 (20)), the method comprising the steps of: demodulating a reception signal to a signal on a real axis and a signal on an imaginary axis (col.4

lines 35-50; the digitally converted signal by the digital signal generator (see fig.1) is mapped into I and Q axes (real and imaginary axes, see fig, 2-4), fig.2 shows High C/N ratio and no phase noise, fig.3 shows High C/N ratio and phase noise included and fig. 4 shows Low C/N ratio and phase noise included); calculating a C/N ratio with the amplitudes in an amplitude direction of signal points of the demodulation signal demodulated by said demodulation means (col. 2 lines 1-4); and a C/N ratio with the amplitudes in a phase direction of the signal points of the demodulation signal demodulated by said demodulation means (col. 5 lines 17-21, fig.3 shows with the high C/N ratio and phase noise included, the amplitude varies with the phase direction); and indication means for indicating the C/N ratios calculated by said C/N ratio calculation means and the phase noise detected by, said phase noise detection means (col. 10 lines 41-65); does not disclose phase noise detection means for detecting phase noise on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction.

However, Ippei teaches phase noise detection (phase error detection (5)) means detection means (para#67 lines 5-67) for detecting phase noise on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction (para#68).

The modified invention of Ippei and Ohishi does not teach displaying the phase noise determined by the phase noise determining step based on the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio

calculated with the amplitudes in the amplitude direction on a display unit as a numeric value.

However, Hisateru teaches teach a display unit (5) to display the phase noise detected by the phase noise detection means based on the C/N ratio calculated with the amplitudes in the amplitude direction (fig.9) and the C/N calculated with the amplitudes in the amplitude direction on a display unit as a numeric value (para#61).

Therefore, taking the combined teaching of Ohishi and Ippei as a whole would have been rendered obvious to one skilled in the art to modify Ohishi to detect phase noise on the basis of the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N ratio calculated with the amplitudes in the phase direction for the benefit of automatically adjusting the loop gain according to the phase noise quantity (para#69, Ippei).

Therefore, taking the combined teaching of Hisateru, Ohishi and Ippei as a whole would have been rendered obvious to one skilled in the art to modify Ohishi and Ippei to display the phase noise detected by the phase noise detection means based on the C/N ratio calculated with the amplitudes in the amplitude direction and the C/N for the benefit of determining the quality of the received signal quantitatively (para#007, Hisateru).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi US, 6,940,923 in view of Ippei et al. (JP2000-138722) in view of Hisateru (JP2003-348030) and in further view Yamazaki US 5,999,027

Re claim 2, the modified invention as in claim 1 does not disclose wherein said demodulation means has phase compensation means for compensating a phase with an external compensation signal, and wherein when the phase noise takes place, said phase compensation means compensates the phase.

However, Yamazaki teaches wherein said demodulation means has phase compensation means (fig.10) for compensating a phase with an external compensation signal (phase difference with internal and external clock signal, col. 2 lines 25-35), and wherein when the phase noise takes place, said phase compensation means compensates the phase (col. 13 lines 26-31, Yamazaki).

Therefore, taking the combined teaching of Yamazaki, Hisateru, Ohishi and Ippei as a whole would have been rendered obvious to one skilled in the art to modify Hisateru, Ohishi and Ippei to compensate a phase with an external compensation signal for the benefit of synchronizing with the internal clock signal.

Allowable Subject Matter

6. Claims 3,6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rahel Guarino whose telephone number is (571)270-1198. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Payne David can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rahel Guarino/
Examiner, Art Unit 2611

/Mohammad H Ghayour/
Supervisory Patent Examiner, Art Unit 2611